

**IN THE CLAIMS**

1. (Currently Amended) A flow homogenizer for insertion in a pipeline conveying a particulate material carried by a carrier fluid comprising a pipe having an inlet end and an outlet end and including a core defined by ~~one~~ two or more core pipe sections arranged in pairs comprising respective upstream and downstream core pipe sections lying adjacent to one another in a fixed spatial arrangement and connected in series between the inlet end and the outlet end, each upstream and downstream pipe section defining a relatively gradual or rapid change in cross-sectional area in order to mix particulate material and carrier fluid entering the inlet end to form a homogeneous mixture on exit from the outlet end, and the cross-sectional area of each upstream core pipe section increasing from an inlet cross-sectional area at an upstream end thereof to a relatively larger cross-sectional area at a downstream end thereof.

2.-22. (Cancelled)

23. (Previously Presented) A homogenizer according to Claim 1 wherein the cross-sectional areas of the inlet and outlet ends are equal.

24. (Currently Amended) A flow homogenizer according to Claim 1 wherein ~~the core is defined by two core pipe sections, the first~~ each upstream core pipe section ~~defines~~ defines a relatively gradual increase in cross-sectional area from ~~an~~ the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and the second each downstream

core pipe section ~~defining~~ defines a relatively rapid decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof.

25. (Currently Amended) A flow homogenizer according to Claim 1 wherein ~~the core is defined by two core pipe sections, the first each upstream~~ core pipe section ~~defining~~ defines a relatively gradual increase in cross-sectional area from ~~an~~ the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and ~~the second each downstream~~ core pipe section ~~defining~~ defines a relatively gradual decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof.

26. (Currently Amended) A flow homogenizer according to Claim 1 ~~the core is defined by two core pipe sections, the first each upstream~~ core pipe section ~~defining~~ defines a relatively gradual increase in cross-sectional area from ~~an~~ the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and ~~the second each downstream~~ core pipe section ~~defining~~ defines a relatively rapid decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof, the length of the ~~first upstream~~ core pipe section being 1.5 times the diameter of the core at the inlet end and the diameter of the core at the junction between the ~~first upstream~~ and ~~second downstream~~ core pipe sections being 1.3 times the diameter of the core at the inlet end.

27. (Currently Amended) A flow homogenizer according to Claim 1 wherein ~~the core is defined by two core pipe sections, the first each upstream~~ core pipe section ~~defining~~ defines a

relatively gradual increase in cross-sectional area from ~~an~~ the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and ~~the~~ second each downstream core pipe section ~~defining~~ defines a relatively gradual decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof, the length of the first upstream core pipe section being 1.5 times the diameter of the core at the inlet end and the diameter of the core at the junction between the first upstream and second downstream core pipe sections being 1.3 times the diameter of the core at the inlet end.

28. (Currently Amended) A flow homogenizer according to Claim 1 wherein ~~the core~~ is ~~defined by two core pipe sections, the first~~ each upstream core pipe section ~~defining~~ defines a relatively rapid increase in cross-sectional area from ~~an~~ the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and ~~the~~ second each downstream core pipe section ~~defining~~ defines a relatively rapid decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof.

29. (Currently Amended) A flow homogenizer according to Claim 1 wherein ~~the core~~ is ~~defined by two core pipe sections, the first~~ core each upstream pipe section ~~defining~~ defines a relatively rapid increase in cross-sectional area from ~~an~~ the inlet cross-sectional area to a maximum cross-sectional area at the downstream end thereof and the second each downstream core pipe section ~~defining~~ defines a relatively gradual decrease in cross-sectional area from the maximum cross-sectional area to an outlet cross-sectional area at a downstream end thereof.

30. (Currently Amended) A flow homogenizer according to Claim 1 wherein the core is defined by four core pipe sections and a middle section the four core pipe sections being arranged in tow pairs, each first and second pair comprising respective upstream and downstream core pipe sections, the first and second pair of core pipe sections being connected in series between the inlet end and the middle section, and the third and fourth second pair of core pipe sections being connected in series between the middle section and the outlet end, the first upstream core pipe section of the first pair of core pipe sections defining a gradual increase in cross-sectional area from an the inlet cross-sectional area to a first maximum cross-sectional area at a downstream end thereof, the secend downstream core pipe section of the first pair of core pipe sections defining a relatively rapid decrease in cross-sectional area from the first maximum cross-sectional area to a middle cross-sectional area, the third upstream core pipe section of the second pair of core pipe sections defining a relatively gradual increase in cross-sectional area from the middle cross-sectional area to a second maximum cross-sectional area at the downstream end thereof and the fourth downstream core pipe section of the second pair of core pipe sections defining a relatively rapid decrease in cross-sectional area from the second maximum cross-sectional area to an outlet cross-sectional area at the downstream end thereof.

31. (Currently Amended) A flow ~~homogenizer~~ homogenizer for insertion in a pipeline conveying a particulate material carried by a carrier fluid comprising a pipe having an inlet end and an outlet end and including a core defined by ~~one~~ two or more core pipe sections arranged in pairs comprising respective upstream and downstream core pipe sections lying adjacent to one another in a fixed spatial arrangement and connected in series between the inlet

end and the outlet end, each ~~core~~ upstream and downstream pipe section defining a relatively gradual or rapid change in cross-sectional area in order to mix particulate material and carrier fluid entering the inlet end to form a homogeneous mixture on exit from the outlet end, and the cross-sectional area of each upstream core pipe section increasing from an inlet cross-sectional area at an upstream end thereof to a relatively larger cross-sectional area at a downstream end thereof, the flow homogenizer further including a flow control system located at the inlet end.

32. (Currently Amended) A flow homogenizer for insertion in a pipeline conveying a particulate material carried by a carrier fluid comprising a pipe having an inlet end and an outlet end and including a core defined by ~~one~~ two or more core pipe sections arranged in pairs comprising respective upstream and downstream core pipe sections lying adjacent to one another in a fixed spatial arrangement and connected in series between the inlet end and the outlet end, each ~~core~~ upstream and downstream pipe section defining a relatively gradual or rapid change in cross-sectional area in order to mix particulate material and carrier fluid entering the inlet end to form a homogeneous mixture on exit from the outlet end, and the cross-sectional area of each upstream core pipe section increasing from an inlet cross-sectional area at an upstream end thereof to a relatively larger cross-sectional area at a downstream end thereof, the flow homogenizer further including a flow control system located at the outlet end.

33. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes at least one wedge-shaped ramp on an inner surface of the pipe.

34. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes at least one wedge-shaped ramp on an inner surface of the pipe.

35. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes a plurality of wedge-shaped ramps spaced about the inner circumference of the inner surface of the pipe.

36. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes a plurality of wedge-shaped ramps spaced about the inner circumference of the inner surface of the pipe.

37. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes at least one aerofoil on an inner surface of the pipe.

38. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes at least one aerofoil on an inner surface of the pipe.

39. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes a plurality of aerofoils spaced about the inner circumference of the inner surface of the pipe.

40. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes a plurality of aerofoils spaced about the inner circumference of the inner surface of the pipe.

41. (Previously Presented) A flow homogenizer according to Claim 31 wherein the inner surface of the input pipe section is shaped to define a flow control system in the form of a tapered throat.

42. (Previously Presented) A flow homogenizer according to Claim 32 wherein the inner surface of the input pipe section is shaped to define a flow control system in the form of a tapered throat.

43. (Previously Presented) A flow homogenizer according to Claim 31 wherein the flow control system includes a combination of one or more wedge-shaped ramps, one or more aerofoils and/or a tapered throat.

44. (Previously Presented) A flow homogenizer according to Claim 32 wherein the flow control system includes a combination of one or more wedge-shaped ramps, one or more aerofoils and/or a tapered throat.

45. (Previously Presented) A flow homogenizer according to Claim 1 further including one or more air jets at the inlet end.

46. (Previously Presented) A flow homogenizer according to Claim 31 further including one or more air jets at the inlet end.

47. (Previously Presented) A flow homogenizer according to Claim 32 further including one or more air jets at the inlet end.

48. (Previously Presented) A flow homogenizer according to Claim 1 further including one or more air jets at the outlet end.

49. (Previously Presented) A flow homogenizer according to Claim 31 further including one or more air jets at the outlet end.

50. (Previously Presented) A flow homogenizer according to Claim 32 further including one or more air jets at the outlet end.